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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,156	10/05/2000	Stephen D. MacArthur	07072-115001	9150
45456	7590	08/31/2004		
RICHARD M. SHARKANSKY			EXAMINER	
PO BOX 557			CHANKONG, DOHM	
MASHPEE, MA 02649			ART UNIT	PAPER NUMBER

2152

DATE MAILED: 08/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/680,156

Applicant(s)

MACARTHUR ET AL.

Examiner

Dohm Chankong

Art Unit

2152

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/15/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1> Applicant's request for continued examination was received, 7.13.2004, and made of record. Applicant's amendment filed on 7.13.2004 in response to Examiner's Final Rejection has been reviewed. The following rejections now apply.

2> Claims 1-5 are now presented for examination.

Double Patenting

3> The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

a. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

b. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4> Claims 1-5 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 6, 7, 9 and 14 of U.S. Patent No. 6,061,274 in view of Noguchi, U.S Patent No. 4,977,556. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the same limitations with some minor variations. Both the pending claims and '274 patent contain the plurality of first and second directors, a system cache, and a bank of disk drives. The '274 patent claims

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do not specifically call for a separate message network and data transfer section or message source verification. However, Noguchi discloses separating the message network from the data transfer section, such a separation being obvious in light of the acquired advantage of decreasing data switching time and transmission delay times in a data transfer network. And it would have been obvious to have allowed the receiving directors to not only check if the message were addressed to the correct receiving director but to verify that the message were from a proper transmitting director, as such a technique providing more message transmission reliability and error-checking and suggested by Noguchi.

5> Claims 1-5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 6, and 7 of copending Application No. 09/540,825. Claim 1 of the '825 application substantially disclose the same claimed limitations with first and second directors, a data transfer section, a message network independent of said transfer section and cache memory. Although the claims are not identical, it would have been obvious to group the first and second directors onto a plurality of first and second director boards respectively for the benefit of consolidating the directors to a central location in the system.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 103

6> Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thibault et al (hereinafter Thibault), U.S. Patent No. 6,061,274 in view of Noguchi, in further view of Hashemi, U.S. Patent No. 5,574,865 ["Hashemi"].

7> Thibault was cited by Examiner in previous Office Action as prior art made of record but not cited and Applicant in IDS #6, filed 4.23.2004.

8> As to claim 1, Thibault teaches a method for transferring data between a host computer/server and a bank of disk drives through a system interface, such system interface comprising: a plurality of first directors coupled to the host computer/server; a plurality of second directors coupled to the bank of disk drives; a data transfer section couple to the plurality of first directors and second directors and a messaging network coupled to the plurality of first directors and the plurality of second directors, such first and second directors controlling data transfer between the host computer and the bank of disk drives in response to messages passing between the directors through the messaging network as such data passes through the data transfer section (Figures 1 and 2, column 2, lines 10-62, column 3, line 30 to column 4, line 52) such method comprising:

preparing in a transmitting one of the directors, a message to be sent to a receiving one, or ones, of the directors (column 7, lines 26-52);

transmitting such message to said receiving one, or ones, of the directors through the messaging network (column 7, line 53 to column 8, line 10);

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receiving in one of the receiving one or ones of the directors the transmitted message (column 8, lines 11-33).

Thibault does not teach transmitting such message to said receiving one, or ones, of the directors through the messaging network but not that such messages by-pass the data transfer section. He also does not teach:

determining in such receiving one, or ones, the receiving directors whether the received packet is from a proper, or an improper transmitting one of the directors;

rejecting the message if it is from an improper transmitting one of the directors and further processing such message if it is from a proper one of the transmitting directors.

9> Noguchi teaches a transmitting messages through a messaging network with such messages by-passing a data transfer section (column 7, lines 31-34 and lines 41-43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include Noguchi's two independent bus design, one for the transfer of data the other for the transfer of messages, into Nakayama's data transfer system to cut down on switching time and transmission delay time through the bus.

10> Hashemi teaches a method for determining in such receiving one, or ones, the receiving directors whether the received one of the messages from a proper, or an improper transmitting one of the directors [column 2 <lines 56-64> | column 3 <lines 24-31> | column 5 <lines 29-35 and 52-57> where: digital modules are comparable to receiving and transmitting directors]; and

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rejecting the one of the messages if it is from an improper transmitting one of the directors and further processing such one of the messages if it is from a proper one of the transmitting directors [column 2 <lines 56-64> | column 3 <lines 24-31> | column 5 <lines 29-35 and 52-57> where: digital modules are comparable to receiving and transmitting directors].

It would have been obvious to one of ordinary skill in the art to incorporate Hashemi's data protection methods into Nakayama's directors and data transfer system. One would have been motivated to implement Hashemi's source validation and message verification methods into Nakayama to prevent director's from receiving corrupt data from improper sources.

11> As to claim 2, Thibault teaches a method including having the receiving, one or ones, of the directors send an acknowledge receipt of the packet to said transmitting one of the transmitting such packet (claim 9).

12> As to claim 3, Thibault discloses a method for transferring data between a host computer/server and a bank of disk drives through a system interface, such system interface comprising: a plurality of first directors coupled to the host computer/server; a plurality of second directors coupled to the bank of disk drives [abstract | Figure 1], such method comprising:

passing data between the plurality of first directors and second directors through a cache memory coupled to the plurality of first directors and second directors [Figure 1];

passing messages through a messaging network coupled to the plurality of first

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directors and the plurality of second directors, such first and second directors controlling data transfer between the host computer and the bank of disk drives in response to the messages passing between the directors through the messaging network as such data passes through cache memory [claims 11 and 14], such memory passing comprising:

preparing in a transmitting one of the directors, one of the messages to be sent to a receiving one, or ones, of the directors [claim 14];

receiving in one of the receiving one or ones of the directors the transmitted one of the messages [claim 14];

Thibault does not disclose that the message network and data transfer section are separate and consequently does not disclose transmitting such one of the messages to receiving one, or ones, of the directors through the messaging network with such one of the messages by-passing the data transfer section. He also does not disclose:

determining in receiving one, or ones, the receiving directors whether the received one of the messages is from a proper, or an improper transmitting one of the directors;

rejecting such one of the transmitted messages if it is from an improper transmitting one of the directors and further processing such message if it is from a proper one of the transmitting directors.

13> Noguchi teaches a transmitting one of the messages through a messaging network with such messages by-passing a data transfer section [column 7 <lines 31-34 and lines 41-43>].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include Noguchi's two independent bus design, one for the transfer of data the other

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for the transfer of messages, into Thibault's data transfer system to cut down on switching time and transmission delay time through the bus. One would have been motivated to apply this implementation as Thibault suggests the use of multiple data buses connected to the processors [column 4 <lines 20-24>].

14> Hashemi teaches a method for determining in such receiving one, or ones, the receiving directors whether the received one of the messages from a proper, or an improper transmitting one of the directors [column 2 <lines 56-64> | column 3 <lines 24-31> | column 5 <lines 29-35 and 52-57> where: digital modules are comparable to receiving and transmitting directors]; and

rejecting the one of the messages if it is from an improper transmitting one of the directors and further processing such one of the messages if it is from a proper one of the transmitting directors [column 2 <lines 56-64> | column 3 <lines 24-31> | column 5 <lines 29-35 and 52-57> where: digital modules are comparable to receiving and transmitting directors].

It would have been obvious to one of ordinary skill in the art to incorporate Hashemi's data protection methods into Thibault's directors and data transfer system. One would have been motivated to implement Hashemi's source validation and message verification methods into Nakayama to prevent director's from receiving corrupt data from improper sources.

15> As to claim 4, Thibault does not specifically disclose a method wherein the messages are transmitted and received as packets.

16> Noguchi discloses the method of claim 1 wherein the messages are transmitted and received as packets [column 7 <lines 20-44> (Examiner's note: Noguchi teaches two buses, one for packet data and the second for non-packet data; therefore, messages passing through the first bus are packetized and passed through as packets onward to the directors. For this particular embodiment of Noguchi's invention, and since Applicant does not specifically claim that the data transfer section must deal exclusively with either packet data or non packet data, then, Noguchi's second bus for non-packets is equivalent in functionality to the "data transfer section" claimed in claim 1. Noguchi's first bus for packet data is equivalent to the "message network".)] It is well known in the art that messages are transmitted and received over networks as packets and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Thibault's data as packets per Noguchi's teachings. .

17> As to claim 5, Thibault does not specifically disclose a method wherein the messages are transmitted and received as packets.

18> As to claim 5, Noguchi discloses the method of claim 3 wherein the messages are transmitted and received as packets [column 7 <lines 20-44> (Examiner's note: Noguchi teaches two buses, one for packet data and the second for non-packet data; therefore, messages passing through the first bus are packetized and passed through as packets onward to the directors. For this particular embodiment of Noguchi's invention, and since Applicant

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does not specifically claim that the data transfer section must deal exclusively with either packet data or non packet data, then, Noguchi's second bus for non-packets is equivalent in functionality to the "data transfer section" claimed in claim 1. Noguchi's first bus for packet data is equivalent to the "message network".)]. It is well known in the art that messages are transmitted and received over networks as packets and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Thibault's data as packets per Noguchi's teachings.

19> Claims 1-5 are rejected under 35 U.S.C 103(a) as being unpatentable over Nakayama et al ["Nakayama"], U.S Patent No. 5,920,893 in view of Noguchi, in further view of Hashemi.

20> Nakayama was cited by Examiner in previous Office Action, dated 12/18/03.

21> As to claim 1, Nakayama teaches a method for transferring data between a host computer/server and a bank of disk drives through a system interface, such system interface comprising: a plurality of first directors coupled to the host computer/server; a plurality of second directors coupled to the bank of disk drives; a data transfer section couple to the plurality of first directors and second directors and a messaging network coupled to the plurality of first directors and the plurality of second directors, such first and second directors controlling data transfer between the host computer and the bank of disk drives in response to messages passing between the directors through the messaging network as such data passes through the data transfer section, such method comprising:

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preparing in a transmitting one of the directors, one of the messages to be sent to a receiving one, or ones of the directors;

receiving in one of the receiving one or ones of the directors the transmitted one of the messages (Figure 3, column 2, lines 27-35, column 4, line 42 to column 5, line 13 and column 6, lines 45-50).

Nakayama does teach transmitting such one of the messages to said receiving one, or ones, of the directors through the messaging network but not that such messages by-pass the data transfer section. He also does not teach:

determining in such receiving one, or ones, the receiving directors whether the received one of the messages from a proper, or an improper transmitting one of the directors;

rejecting the one of the messages if it is from an improper transmitting one of the directors and further processing such one of the messages if it is from a proper one of the transmitting directors

22> Noguchi teaches a transmitting one of the messages through a messaging network with such messages by-passing a data transfer section [column 7 <lines 31-34 and lines 41-43>].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include Noguchi's two independent bus design, one for the transfer of data the other for the transfer of messages, into Nakayama's data transfer system to cut down on switching time and transmission delay time through the bus.

23> Hashemi teaches a method for determining in such receiving one, or ones, the

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receiving directors whether the received one of the messages from a proper, or an improper transmitting one of the directors [column 2 <lines 56-64> | column 3 <lines 24-31> | column 5 <lines 29-35 and 52-57> where: digital modules are comparable to receiving and transmitting directors]; and

rejecting the one of the messages if it is from an improper transmitting one of the directors and further processing such one of the messages if it is from a proper one of the transmitting directors [column 2 <lines 56-64> | column 3 <lines 24-31> | column 5 <lines 29-35 and 52-57> where: digital modules are comparable to receiving and transmitting directors].

It would have been obvious to one of ordinary skill in the art to incorporate Hashemi's data protection methods into Nakayama's directors and data transfer system. One would have been motivated to implement Hashemi's source validation and message verification methods into Nakayama to prevent director's from receiving corrupt data from improper sources.

24> As to claim 2, Nakayama does not explicitly teach a method including having the receiving, one or ones, of the directors send an acknowledge receipt of the one of the messages to said transmitting one of the transmitting such one of the messages.

25> It would have been obvious to modify Nakayama's messaging network so that it included acknowledgement functionality between the first and second level directors as such a modification is well known in the art, and therefore involves only routine skill in the art.

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26> As to claim 3, Nakayama discloses a method for transferring data between a host computer/server and a bank of disk drives through a system interface, such system interface comprising: a plurality of first directors coupled to the host computer/server; a plurality of second directors coupled to the bank of disk drives [abstract | Figure 1], such method comprising:

passing data between the plurality of first directors and second directors through a cache memory coupled to the plurality of first directors and second directors [Figure 3 <items 305, 306, 309, 310, 311> | column 4 <lines 61-63>];

passing messages through a messaging network coupled to the plurality of first directors and the plurality of second directors, such first and second directors controlling data transfer between the host computer and the bank of disk drives in response to the messages passing between the directors through the messaging network as such data passes through cache memory [column 3 <lines 48-62> | column 4 <lines 2-25 and lines 52-65>], such memory passing comprising:

preparing in a transmitting one of the directors, one of the messages to be sent to a receiving one, or ones, of the directors [column 4 <lines 2-7>];

receiving in one of the receiving one or ones of the directors the transmitted one of the messages [column 6 <lines 7-11>];

Nakayama does not disclose that the message network and data transfer section are separate and consequently does not disclose transmitting such one of the messages to receiving one, or ones, of the directors through the messaging network with such one of the messages by-passing the data transfer section. He also does not disclose:

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determining in receiving one, or ones, the receiving directors whether the received one of the messages is from a proper, or an improper transmitting one of the directors;

rejecting such one of the transmitted messages if it is from an improper transmitting one of the directors and further processing such message if it is from a proper one of the transmitting directors.

27> Noguchi teaches a transmitting one of the messages through a messaging network with such messages by-passing a data transfer section [column 7 <lines 31-34 and lines 41-43>]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include Noguchi's two independent bus design, one for the transfer of data the other for the transfer of messages, into Nakayama's data transfer system to cut down on switching time and transmission delay time through the bus. One would have motivated to apply this implementation in Nakayama as he suggests computers attached to different buses for the transmission of different types of data [column 4 <lines 56-60>].

28> Hashemi teaches a method for determining in such receiving one, or ones, the receiving directors whether the received one of the messages from a proper, or an improper transmitting one of the directors [column 2 <lines 56-64> | column 3 <lines 24-31> | column 5 <lines 29-35 and 52-57> where: digital modules are comparable to receiving and transmitting directors]; and

rejecting the one of the messages if it is from an improper transmitting one of the

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directors and further processing such one of the messages if it is from a proper one of the transmitting directors [column 2 <lines 56-64> | column 3 <lines 24-31> | column 5 <lines 29-35 and 52-57> where: digital modules are comparable to receiving and transmitting directors].

It would have been obvious to one of ordinary skill in the art to incorporate Hashemi's data protection methods into Nakayama's directors and data transfer system. One would have been motivated to implement Hashemi's source validation and message verification methods into Nakayama to prevent director's from receiving corrupt data from improper sources.

29> As to claim 4, Nakayama does not specifically disclose a method wherein the messages are transmitted and received as packets.

30> Noguchi discloses the method of claim 1 wherein the messages are transmitted and received as packets [column 7 <lines 20-44> (Examiner's note: Noguchi teaches two buses, one for packet data and the second for non-packet data; therefore, messages passing through the first bus are packetized and passed through as packets onward to the directors. For this particular embodiment of Noguchi's invention, and since Applicant does not specifically claim that the data transfer section must deal exclusively with either packet data or non packet data, then, Noguchi's second bus for non-packets is equivalent in functionality to the "data transfer section" claimed in claim 1. Noguchi's first bus for packet data is equivalent to the "message network".)] It is well known in the art that messages are transmitted and received over networks as packets and therefore it would have been obvious to one of

ordinary skill in the art at the time the invention was made to implement Nakayama's data as packets per Noguchi's teachings. .

31> As to claim 5, Nakayama does not specifically disclose a method wherein the messages are transmitted and received as packets.

32> As to claim 5, Noguchi discloses the method of claim 3 wherein the messages are transmitted and received as packets [column 7 <lines 20-44> (Examiner's note: Noguchi teaches two buses, one for packet data and the second for non-packet data; therefore, messages passing through the first bus are packetized and passed through as packets onward to the directors. For this particular embodiment of Noguchi's invention, and since Applicant does not specifically claim that the data transfer section must deal exclusively with either packet data or non packet data, then, Noguchi's second bus for non-packets is equivalent in functionality to the "data transfer section" claimed in claim 1. Noguchi's first bus for packet data is equivalent to the "message network".)]. It is well known in the art that messages are transmitted and received over networks as packets and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Nakayama's data as packets per Noguchi's teachings.

Response to Arguments

Applicant's arguments filed 7.13.2004 have been fully considered but they are not persuasive.

In regards to the nonstatutory double patenting and 103(a) rejections, Applicant argues that Noguchi fails to suggest or recognize the claimed limitation of providing a separate “message network” and “data transfer section” thereby allowing messages to by-pass the data transfer section of the system. Applicant supports this assertion by stating that Noguchi specifically suggests only a packet bus for packet data and a non-packet bus for non-packet data, and therefore, no mention of a separate message network is given by the teaching. In particular, the point of contention seems to lay with the fact that “Noguchi is dealing with two types of DATA”, the suggestion being that messages are not data.

Examiner believes that messages and packets can indeed be broadly classified as data, as both terms refer to a type of data that is passed in a network, and with this in mind, the teaching provided by Noguchi does not exclude the possibility of messages being transmitted through the non-packet bus for non-packet data (or even possibly, be transmitted through the packet bus for packet data, while other data is passed through the non-packet bus). Noguchi makes several references to the second bus as a “message bus” [Figure 2 <item 103> | column 7 <line 33>]. Consequently, Examiner believes the teachings provided by Noguchi suggest the claimed limitations and maintains that the non-statutory double patent and 103(a) rejections are proper.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S Patent No. 4,688,168 to Gudaitis et al [column 2 <lines 17-32> | claim 1 for a dual transmission buses, one bus for transmission of data and a control bus for transmission of control messages].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dohm Chankong whose telephone number is (703)305-8864. The examiner can normally be reached on 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (703)305-8498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DC


ZARNI MAUNG
PRIMARY EXAMINER